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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/538,664	05/25/2007	Stephen John Kemp	10761.1472-00	7299

81331 7590 03/25/2010

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EXAMINER	
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ART UNIT	PAPER NUMBER
2163	

NOTIFICATION DATE	DELIVERY MODE
03/25/2010	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/538,664	KEMP ET AL.	
	Examiner	Art Unit	
	TUAN PHAM	2163	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12/28/2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3,4,6-10,12,13,15-27,29-31,34,35 and 40-42* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3,4,6-10,12,13,15-27,29-31,34,35 and 40-42* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. This Action is responsive to the Applicant's Amendment/Remarks filed on 12/28/2009. In the Amendment, applicant amended claims 1, 3-4, 6-10, 12-13, 15, 17-21, 24, 26-27, 30-31, and 34. Claims 40-42 are added. Claims 2, 5, 11, 14, 33, and 37-39 are cancelled.

2. As to Arguments and Remarks filed in the Amendment, please see Examiner's responses shown after **Rejections - 35 U.S.C § 103.**

3. Please note claims 1, 3-4, 6-10, 12-13, 15-32, 34-36, and 40-42 are pending.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1, 3-4, 6-10, 12-13, 15-27, 29-31, 34-35, and 40-42 are rejected under 35 U.S.C. 102(b) as being unpatentable over Shoup et al (US Patent No. 6108657, herein Shoup).

As per claim 1, Shoup discloses:

(currently Amended) A method for generating a multi-dimensional data structure in order to access data associated with a plurality of data sources, said plurality of data sources having a different number of dimensions than said multi-dimensional data structure ([col. 6, lines 5-21], [col. 8, lines 55-60], wherein "generating a multi-dimensional view for a number of different measures. A set of records that include measure values associated with the different measures is retrieved in response to a set of queries. A number of different dimension values are also represented throughout the set of records, and each one of the dimension values is associated with at least one of a number of different dimensions"), **said method comprising:**

defining at least one dimension and a dimension value associated with the at least one dimension for said multi-dimensional data structure (Figure 7C, [col. 6, lines 5-53], e.g., "generating a multi-dimensional view for a number of different measures. A set of records that include measure values associated with the different measures is retrieved in response to a set of queries. A number of different dimension values are also represented throughout the set of records, and each one of the dimension values is associated with at least one of a number of different dimensions");

creating a plurality of combinations of dimension values, wherein a combination defines a data item (Figure 6D, element 263, [col. 11, lines 33-47], [col. 15, lines 53-67], [col. 16, lines 36-61], and [col. 17, lines 36-45], e.g., "the layout engine 212 utilizes the information created in the generation of the

layout mapping and the user's formatting information to create a multi-dimensional view. The layout engine 212 generates an axis display for each axis of the view. Each axis display correlates a set of cells to a combination of dimension values" and [col. 10, lines 12-29] "The master table index 204 contains dimension index records. Each dimension index record identifies the following: 1) a dimension value that is associated with one of the dimensions called for in the queries; 2) records in the master table 202 that contain the dimension value; and 3) the dimension associated with the dimension value"), **and**

wherein said multi-dimensional data structure is defined by a first set of data items and each of the plurality of data sources is defined by a second set of data items ([col. 6, lines 13-37], [col. 11, lines 21-32], e.g., "traditional multi-dimensional record structure, multi-dimensional views may be generated in accordance with the present invention from records that are retrieved using multiple queries. As a result, the measures and dimensions provided in a view may be expanded by performing a new query to gather new measures or dimension values and augmenting existing information in the record management system" and "Each dimension index record identifies a dimension value from the master table, an associated dimension, and each record in the master table that contains the dimension value");

mapping data items in the first set of data items in said multi-dimensional data structure to corresponding data items in the second set of data items in each data source (Shoup, [col. 6, lines 47-64], e.g., "Once a layout mapping is generated, the record management system converts the layout

mapping into a multi-dimensional view. For each cell in the layout mapping, measure results are determined based on the measure values in the records in each group corresponding to the cell. The measure results are loaded into the cells, and the multi-dimensional view is displayed");

determining a location of a gap, comprising a difference between the first set of data items and the second set of data items (Shoup, [col. 16, lines 62-67], and [col. 17, lines 1-35 and lines 53-67], e.g., "In the group designation (step 266), the query map record for each query that produced one of the records identified in the index record comparison (step 264) is examined. If the query map record indicates that the query called for a measure value that is associated with a measure to be displayed in the multi-dimensional view, then the records produced by that query are designated as being in the group. Otherwise, the records produced by that query are not included in the group. If no records are designated as being in the group, then no group is created. If at least one record has been designated into the group, then a group is created for the selected axis");

bridging the gap by at least one of the following:

obtaining, from one of the data sources, a further data item not originally obtainable in the second set of data items ([col. 10, lines 30-67], [col. 13, lines 27-48], [col. 14, lines 1-17], wherein "After new records are placed in the master table 202 in response to a new query, the index engine 211 reviews each new record. If the index engine encounters a dimension value that does not already have a corresponding index record, then a new dimension index record

is created for the dimension value. If the index engine encounters a dimension value that already has a corresponding dimension index record, then the existing dimension index record is updated to account for the new record");

modifying the multi-dimensional data structure to be further defined by the second set of data items (Figure 6B, element 244, [col. 14, lines 18-54], wherein "index engine 211 to update the master table index 204 in step 225 in response to a newly received set of records from a query. First, the index engine 211 selects a record in the newly received set of records in step 240. Next, the index engine 211 selects a dimension value in the selected record"); **and**

converting a source data structure in at least one of the data sources into another data structure (Figure 8, [col. 6, lines 47-51], [col. 11, lines 7-15 and lines 40-48], [col. 19, lines 56-65], [col. 21, lines 44-55], wherein "the record management system converts the layout mapping into a multi-dimensional view. For each cell in the layout mapping, measure results are determined based on the measure values in the records in each group corresponding to the cell").

As per claim 3, Shoup discloses:

(currently Amended) The method of claim 1, wherein said gap is bridged at said plurality of data sources ([col. 11, lines 7-20 and lines 35-47], [col. 16, lines 45-50], e.g., "Each measure result is loaded into a corresponding cell in the layout mapping storage unit 205. Once the axis displays are formed and the cells are loaded, the display unit 206 displays the view that is provided from the converted layout mapping" and "The cells will later be filled with measure results

for the measure being characterized in the view. The cells are designated to correspond to the groups of records on each axis. Each cell corresponds to a group on each axis"), i.e., the system takes into account that there are multiple different data or dimensions collected from other sources and finds ways to solve such differences.

As per claim 4, Shoup discloses:

(currently amended) The method of claim 1, <u>further comprising defining an attribute and an attribute value associated with the attribute for said multi-dimensional data structure</u>, wherein <u>the</u> attribute is assigned to a single dimension ([col. 6, lines 44-64], [col. 9, lines 46-67], e.g., " each cell in the layout mapping, measure results are determined based on the measure values in the records in each group corresponding to the cell" and [col. 13, lines 49-56], e.g., "Each dimension index record identifies a dimension value and the records in the master table 202 that include the dimension value. Each dimension index record also preferably includes an indication of the query that provided each of the identified records").

As per claim 6, Shoup discloses:

(currently amended) The method of claim 1, wherein said creating <u>the</u> combinations includes linking two or more dimensions for said combination created (Figure 6B, element 263, [col. 9, lines 17-22], [col. 15, lines 58-67] [col. 21, lines 32-43], e.g., "The record management system 200 is

coupled to a database management system 213, which is linked to a database 214. The database 214 contains records that are to be used by the record management system 200 in providing multi-dimensional views" and "multi-dimensional view is created, the record management system 200 determines, in step 226 (FIG. 6(a)), whether the user wishes to have a view created. The input control unit 201, control engine 209 and display 206 combine to provide the user with an interface for indicating whether a multi-dimensional view is to be generated").

As per claim 7, Shoup discloses:

(currently amended) The method of claim 6, wherein said mapping includes mapping the combination to a data structure for one of the data sources (Shoup, [col. 14, lines 25-54], [col. 17, lines 36-45], e.g., "the selected dimension value, the index engine 211 determines, in step 243, whether a corresponding dimension index record already exists in the master table index 204. If a corresponding dimension index record already exists for the dimension value, then the existing dimension index record is updated in step 244 to identify the selected record" and "multi-dimensional view may be required to have B dimensions on a vertical axis, D dimensions on a horizontal axis, and a measure being displayed in the view. In such a case, the layout engine 212 generates a set of groups of records for the horizontal axis and a set of groups of records for the vertical axis. For each of these axes, the layout engine 212 selects dimension

value combinations, processes sets of dimension index records for each combination").

As per claim 8, Shoup discloses:

(currently amended) The method of claim 1, further comprising creating a mapping file for historic data conversion (Shoup, [col. 3, lines 5-22], [col. 13, lines 27-48], e.g., "In response to newly received records from a query, the record management system 200 updates the query map 203, in step 224 (FIG. 6(a)), so that it contains a record of the most recently performed query. The query map 203 is updated by the query engine 210 creating a record in the query map 203 that identifies the most recent query and each of the dimensions and measures". Also the phrase "historic data conversion" needs further elaboration. Otherwise the examiner interpretation is sufficed).

As per claim 9, Shoup discloses:

(currently amended) The method of claim 1, further comprising generating a report, wherein said report is a combination report, a hierarchy report or a mapping report (Figure 17, [col. 6, lines 6-30], [col. 11, lines 59-65], e.g., "generate a multi-dimensional layout mapping for the measures to be viewed. The layout mapping includes a set of cells that are arranged with respect to a set of axes" and [col. 10, lines 11-20], e.g., "The index engine 211 is responsible for generating and updating the master table index 204. After new records are

placed in the master table 202 in response to a new query, the index engine 211 reviews each new record").

As per claim 10, Shoup discloses:

(currently amended) A program storage device readable by a machine, tangibly embodying a program of instructions executable by a machine, said instructions for generating a new multi-dimensional chart of accounts that is used to access data associated with a plurality of source charts of accounts, wherein said plurality of source charts of accounts has a different number of dimensions than said new multi-dimensional chart of accounts ([col. 6, lines 5-21], [col. 8, lines 55-60], wherein "generating a multi-dimensional view for a number of different measures. A set of records that include measure values associated with the different measures is retrieved in response to a set of queries. A number of different dimension values are also represented throughout the set of records, and each one of the dimension values is associated with at least one of a number of different dimensions"), **the program storage device executing the method comprising:**

defining at least one dimension and a dimension value associated with the at least one dimension for said new multi-dimensional chart of accounts (Figure 7C, [col. 6, lines 5-53], e.g., "generating a multi-dimensional view for a number of different measures. A set of records that include measure values associated with the different measures is retrieved in response to a set of queries. A number of different dimension values are also represented throughout

the set of records, and each one of the dimension values is associated with at least one of a number of different dimensions");

creating a plurality of combinations of dimension values, wherein each of the combinations defines a data item (Figure 6B, element 263, [col. 11, lines 33-47], [col. 15, lines 53-67], [col. 16, lines 51-61], and [col. 17, lines 36-45], e.g., "the layout engine 212 utilizes the information created in the generation of the layout mapping and the user's formatting information to create a multi-dimensional view. The layout engine 212 generates an axis display for each axis of the view. Each axis display correlates a set of cells to a combination of dimension values" and [col. 10, lines 12-29] "The master table index 204 contains dimension index records. Each dimension index record identifies the following: 1) a dimension value that is associated with one of the dimensions called for in the queries; 2) records in the master table 202 that contain the dimension value; and 3) the dimension associated with the dimension value"), **wherein said new multi-dimensional chart of accounts is defined by a first set of data items, and wherein each of said plurality of source charts of accounts is defined by a second set of data items** (Shoup, [col. 11, lines 33-47], [col. 15, lines 53-67], [col. 16, lines 51-61], and [col. 17, lines 36-45], e.g., "Once the layout mapping is generated, the layout engine 212 utilizes the information created in the generation of the layout mapping and the user's formatting information to create a multi-dimensional view. The layout engine 212 generates an axis display for each axis of the view. Each axis display correlates a set of cells to a combination of dimension values" and [col. 10, lines 12-29] "The master table

index 204 contains dimension index records. Each dimension index record identifies the following: 1) a dimension value that is associated with one of the dimensions called for in the queries; 2) records in the master table 202 that contain the dimension value; and 3) the dimension associated with the dimension value") ;

mapping data items in the first set of data items in said new multi dimensional chart of accounts to corresponding data items in the second set of data items in each source chart of accounts (Shoup, [col. 6, lines 47-64], e.g., "Once a layout mapping is generated, the record management system converts the layout mapping into a multi-dimensional view. For each cell in the layout mapping, measure results are determined based on the measure values in the records in each group corresponding to the cell. The measure results are loaded into the cells, and the multi-dimensional view is displayed"); **and**

determining a location of a gap comprising a difference between said first set of data items and a second set of data items (Shoup, [col. 16, lines 62-67], and [col. 17, lines 1-35 and lines 53-67], e.g., "In the group designation (step 266), the query map record for each query that produced one of the records identified in the index record comparison (step 264) is examined. If the query map record indicates that the query called for a measure value that is associated with a measure to be displayed in the multi-dimensional view, then the records produced by that query are designated as being in the group. Otherwise, the records produced by that query are not included in the group. If no records are designated as being in the group, then no group is created. If at least one record

has been designated into the group, then a group is created for the selected axis"); **bridging the gap by at least one of the following**:

obtaining, from one of the data sources, a further data item not originally obtainable in the second set of data items ([col. 10, lines 30-67], [col. 13, lines 27-48], [col. 14, lines 1-17], wherein "After new records are placed in the master table 202 in response to a new query, the index engine 211 reviews each new record. If the index engine encounters a dimension value that does not already have a corresponding index record, then a new dimension index record is created for the dimension value. If the index engine encounters a dimension value that already has a corresponding dimension index record, then the existing dimension index record is updated to account for the new record");

modifying the multi-dimensional data structure to be further defined by the second set of data items (Figure 6B, element 244, [col. 14, lines 18-54], wherein "index engine 211 to update the master table index 204 in step 225 in response to a newly received set of records from a query. First, the index engine 211 selects a record in the newly received set of records in step 240. Next, the index engine 211 selects a dimension value in the selected record"); **and**

converting a source data structure in at least one of the data sources into another data structure (Figure 8, [col. 6, lines 47-51], [col. 11, lines 7-15 and lines 40-48], [col. 19, lines 56-65], [col. 21, lines 44-55], wherein "the record management system converts the layout mapping into a multi-dimensional view. For each cell in the layout mapping, measure results are determined based on the measure values in the records in each group corresponding to the cell").

As per claim 12, Shoup discloses:

(currently amended) The program storage device of claim 10, wherein said gap is bridged at said plurality of source charts of accounts (Shoup, [col. 11, lines 7-20 and lines 35-47], [col. 16, lines 45-50], e.g., "The measure values in these records are then retrieved by the layout engine 212 and used to determine measure results. Each measure result is loaded into a corresponding cell in the layout mapping storage unit 205. Once the axis displays are formed and the cells are loaded, the display unit 206 displays the view that is provided from the converted layout mapping" and "The cells will later be filled with measure results for the measure being characterized in the view. The cells are designated to correspond to the groups of records on each axis. Each cell corresponds to a group on each axis"), i.e., the system takes into account that there are multiple different data or dimensions collected from other sources and finds ways to solve such differences.

As per claim 13, Shoup discloses:

(currently amended) The program storage device of claim 10, wherein the method further comprises defining an attribute and an attribute value associated with the attribute for said multi-dimensional chart of accounts, wherein the is assigned to a single dimension (Shoup, [col. 6, lines 44-64], [col. 9, lines 46-67], e.g., " each cell in the layout mapping, measure results are determined based on the measure values in the records in each group

corresponding to the cell" and [col. 13, lines 49-56], e.g., "Each dimension index record identifies a dimension value and the records in the master table 202 that include the dimension value. Each dimension index record also preferably includes an indication of the query that provided each of the identified records").

As per claim 15, Shoup discloses:

(Currently Amended) The program storage device of claim 10, wherein said dimension is at least one of a dimension for a product, an industry classification and a maturity (Shoup, figure 7A-7C], i.e., VCR or TV is one of a dimension for a product).

As per claim 16, Shoup discloses:

(original) The program storage device of claim 15, wherein said dimension value associated with said product dimension is one of corporate loans, mortgages, home credits and personal loans (Shoup, figure 7A-7C, i.e., year, region, product, sale which read on the claimed limitation that dimension value associated with production dimension.

As per claim 17, the rejection of claim 10 incorporated and further Shoup discloses:

(currently amended) The program storage device of claim 10, wherein method further comprises creating the combinations includes linking two or more dimensions for a created combination (Shoup, [col. 9, lines 17-22],

[col. 15, lines 58-67] [col. 21, lines 32-43], e.g., "The record management system 200 is coupled to a database management system 213, which is linked to a database 214. The database 214 contains records that are to be used by the record management system 200 in providing multi-dimensional views" and "multi-dimensional view is created, the record management system 200 determines, in step 226 (FIG. 6(a)), whether the user wishes to have a view created. The input control unit 201, control engine 209 and display 206 combine to provide the user with an interface for indicating whether a multi-dimensional view is to be generated").

As per claim 18, Shoup discloses:

(currently amended) The program storage device of claim 17, wherein said method further comprises mapping includes mapping a combination for a dimension value to said plurality of source charts of accounts (Shoup, [col. 14, lines 25-54], [col. 17, lines 36-45], e.g., "the selected dimension value, the index engine 211 determines, in step 243, whether a corresponding dimension index record already exists in the master table index 204. If a corresponding dimension index record already exists for the dimension value, then the existing dimension index record is updated in step 244 to identify the selected record" and "multi-dimensional view may be required to have B dimensions on a vertical axis, D dimensions on a horizontal axis, and a measure being displayed in the view. In such a case, the layout engine 212 generates a set of groups of records for the horizontal axis and a set of groups of records for the vertical axis. For

each of these axes, the layout engine 212 selects dimension value combinations, processes sets of dimension index records for each combination").

As per claim 19, Shoup discloses:

(currently amended) The program storage device of claim 10, wherein the method further comprises creating a mapping file for historic data conversion (Shoup, [col. 13, lines 27-48], e.g., "In response to newly received records from a query, the record management system 200 updates the query map 203, in step 224 (FIG. 6(a)), so that it contains a record of the most recently performed query. The query map 203 is updated by the query engine 210 creating a record in the query map 203 that identifies the most recent query and each of the dimensions and measures". Also the phrase "historic data conversion" needs further elaboration. Otherwise the examiner interpretation is sufficed).

As per claim 20, Shoup discloses:

(currently amended) The program storage device of claim 10, wherein the method further comprises generating a report, said report is a combination report, a hierarchy report, or a mapping report (Figure 17, [col. 6, lines 6-30], [col. 11, lines 59-65], e.g., "generate a multi-dimensional layout mapping for the measures to be viewed. The layout mapping includes a set of cells that are arranged with respect to a set of axes" and [col. 10, lines 11-20], e.g., "The index engine 211 is responsible for generating and updating the master table index

204. After new records are placed in the master table 202 in response to a new query, the index engine 211 reviews each new record").

As per claim 21, Shoup discloses:

(currently amended) A tool for generating a multi-dimensional data structure for integrating data from a plurality of data sources, said plurality of data sources having a different number of dimensions than said multi-dimensional data structure ([col. 6, lines 5-21], [col. 8, lines 55-60], wherein "generating a multi-dimensional view for a number of different measures. A set of records that include measure values associated with the different measures is retrieved in response to a set of queries. A number of different dimension values are also represented throughout the set of records, and each one of the dimension values is associated with at least one of a number of different dimensions"), **said tool comprising:**

a relational database (Shoup, figure 5);

a processor (Shoup, [col. 9, lines 5-16], e.g., "The processing engines include a control engine 209, a query engine 210, an index engine 211, and a layout engine 212. Each processing engine may be implemented by having a processor unit execute processor readable instructions stored in a computer readable medium");

a data structure generator, wherein said data structure generator defines at least one dimension and a dimension value associated with the at least one dimension (7C, [col. 6, lines 5-53], e.g., "generating a multi-

dimensional view for a number of different measures. A set of records that include measure values associated with the different measures is retrieved in response to a set of queries. A number of different dimension values are also represented throughout the set of records, and each one of the dimension values is associated with at least one of a number of different dimensions");

a combination module for creating and retrieving a plurality of combinations of dimension values (Figure 6D, element 263, [col. 11, lines 33-47], [col. 15, lines 53-67], [col. 16, lines 36-61], and [col. 17, lines 36-45], e.g., "the layout engine 212 utilizes the information created in the generation of the layout mapping and the user's formatting information to create a multi-dimensional view. The layout engine 212 generates an axis display for each axis of the view. Each axis display correlates a set of cells to a combination of dimension values" and [col. 10, lines 12-29] "The master table index 204 contains dimension index records. Each dimension index record identifies the following: 1) a dimension value that is associated with one of the dimensions called for in the queries; 2) records in the master table 202 that contain the dimension value; and 3) the dimension associated with the dimension value"), **wherein a combination defines a data item, and wherein said multi-dimensional data structure is defined by a first set of data items and said plurality, of data sources is defined by a second set of data items** (Shoup, [col. 11, lines 33-47], [col. 15, lines 53-67], [col. 16, lines 51-61], and [col. 17, lines 36-45], e.g., "Once the layout mapping is generated, the layout engine 212 utilizes the information created in the generation of the layout mapping and the user's formatting

information to create a multi-dimensional view. The layout engine 212 generates an axis display for each axis of the view. Each axis display correlates a set of cells to a combination of dimension values" and [col. 10, lines 12-29] "The master table index 204 contains dimension index records. Each dimension index record identifies the following: 1) a dimension value that is associated with one of the dimensions called for in the queries; 2) records in the master table 202 that contain the dimension value; and 3) the dimension associated with the dimension value") ;

a mapping module for mapping data items in the first set of data items in the multi-dimensional data structure to corresponding data items in the second set of data items in said plurality of data sources (Shoup, [col. 6, lines 47-64], e.g., "Once a layout mapping is generated, the record management system converts the layout mapping into a multi-dimensional view. For each cell in the layout mapping, measure results are determined based on the measure values in the records in each group corresponding to the cell. The measure results are loaded into the cells, and the multi-dimensional view is displayed");

a gap detector for detecting a gap comprising a difference between the first set of data items and the second set of data items (Shoup, [col. 16, lines 62-67], and [col. 17, lines 1-35 and lines 53-67], e.g., "In the group designation (step 266), the query map record for each query that produced one of the records identified in the index record comparison (step 264) is examined. If the query map record indicates that the query called for a measure value that is

associated with a measure to be displayed in the multi-dimensional view, then the records produced by that query are designated as being in the group. Otherwise, the records produced by that query are not included in the group. If no records are designated as being in the group, then no group is created. If at least one record has been designated into the group, then a group is created for the selected axis"); **and**

a gap resolver for facilitating bridging of the gap by at least one of the following:

obtaining, from one of the data sources, a further data item not originally obtainable in the second set of data items ([col. 10, lines 30-67], [col. 13, lines 27-48], [col. 14, lines 1-17], wherein "After new records are placed in the master table 202 in response to a new query, the index engine 211 reviews each new record. If the index engine encounters a dimension value that does not already have a corresponding index record, then a new dimension index record is created for the dimension value. If the index engine encounters a dimension value that already has a corresponding dimension index record, then the existing dimension index record is updated to account for the new record");

modifying the multi-dimensional data structure to be further defined by the second set of data items (Figure 6B, element 244, [col. 14, lines 18-54], wherein "index engine 211 to update the master table index 204 in step 225 in response to a newly received set of records from a query. First, the index engine 211 selects a record in the newly received set of records in step 240. Next, the index engine 211 selects a dimension value in the selected record"); **and**

converting a source data structure in at least one of the data sources into another data structure (Figure 8, [col. 6, lines 47-51], [col. 11, lines 7-15 and lines 40-48], [col. 19, lines 56-65], [col. 21, lines 44-55], wherein "the record management system converts the layout mapping into a multi-dimensional view. For each cell in the layout mapping, measure results are determined based on the measure values in the records in each group corresponding to the cell").

As per claim 22, Shoup discloses:

The tool of claim 21, wherein said tool is in communication with said plurality of data sources via an electronic network (Shoup, [col. 9, lines 24-33], e.g., "the system bus 208 may be extended outside of the record management system 200 and coupled to the database management system 213. Alternatively, the record management system 200 may include a communications peripheral (not shown) which couples the database management system 213 to the record management system 200. The communications peripheral may couple the record management system 200 and the database management system 213 via a communications medium").

As per claim 23, Shoup discloses:

The tool of claim 21, wherein said gaps are bridged at said plurality of data sources (Shoup, [col. 11, lines 7-20 and lines 35-47], [col. 16, lines 45-50], e.g., "The measure values in these records are then retrieved by the layout engine 212 and used to determine measure results. Each measure result is loaded into

a corresponding cell in the layout mapping storage unit 205. Once the axis displays are formed and the cells are loaded, the display unit 206 displays the view that is provided from the converted layout mapping" and "The cells will later be filled with measure results for the measure being characterized in the view. The cells are designated to correspond to the groups of records on each axis. Each cell corresponds to a group on each axis"), i.e., the system takes into account that there are multiple different data or dimensions collected from other sources and finds ways to solve such differences.

As per claim 24, Shoup discloses:

(currently amended) The tool of claim 21, wherein said combination module creates the combination by linking two or more dimensions (Shoup, [col. 9, lines 17-22], [col. 15, lines 58-67] [col. 21, lines 32-43], e.g., "The record management system 200 is coupled to a database management system 213, which is linked to a database 214. The database 214 contains records that are to be used by the record management system 200 in providing multi-dimensional views" and "multi-dimensional view is created, the record management system 200 determines, in step 226 (FIG. 6(a)), whether the user wishes to have a view created. The input control unit 201, control engine 209 and display 206 combine to provide the user with an interface for indicating whether a multi-dimensional view is to be generated").

As per claim 25, Shoup discloses:

(currently amended) The tool of claim 21, further comprising a mapping file module for creating a mapping file used for historic data conversion (Shoup, [col. 13, lines 27-48], e.g., "In response to newly received records from a query, the record management system 200 updates the query map 203, in step 224 (FIG. 6(a)), so that it contains a record of the most recently performed query. The query map 203 is updated by the query engine 210 creating a record in the query map 203 that identifies the most recent query and each of the dimensions and measures". Also the phrase "historic data conversion" needs further elaboration. Otherwise the examiner interpretation is sufficed).

As per claim 26, Shoup discloses:

(currently amended) The tool of claim 21, further comprising a report generator for generating a report, wherein said report is a combination report, a hierarchy report or a mapping report (Shoup, [col. 6, lines 6-30], e.g., "generate a multi-dimensional layout mapping for the measures to be viewed. The layout mapping includes a set of cells that are arranged with respect to a set of axes" and [col. 10, lines 11-20], e.g., "The index engine 211 is responsible for generating and updating the master table index 204. After new records are placed in the master table 202 in response to a new query, the index engine 211 reviews each new record").

As per claim 27, Shoup discloses:

(Currently Amended) A method according to claim 1, further comprising documenting how the gap was bridged (Shoup, [col. 11, lines 7-20 and lines 35-47], [col. 16, lines 45-50], e.g., "The measure values in these records are then retrieved by the layout engine 212 and used to determine measure results. Each measure result is loaded into a corresponding cell in the layout mapping storage unit 205. Once the axis displays are formed and the cells are loaded, the display unit 206 displays the view that is provided from the converted layout mapping" and "The cells will later be filled with measure results for the measure being characterized in the view. The cells are designated to correspond to the groups of records on each axis. Each cell corresponds to a group on each axis"), i.e., the system takes into account that there are multiple different data or dimensions collected from other sources and finds ways to solve such differences.

As per claim 28, Shoup discloses:

A method according to claim 1, wherein the multi-dimensional data structure comprises a centralized database (Shoup, [figure 5], [col. 9, lines 16-46], wherein illustrates a multi-dimensional data structure and is centralized database).

As per claim 30, the rejection of claim 11 incorporated and further Shoup discloses:

(Currently Amended) A program storage device according to claim 10,

wherein the method further comprises documenting how the gap was bridged (Shoup, [col. 11, lines 7-20 and lines 35-47], [col. 16, lines 45-50], e.g., "The measure values in these records are then retrieved by the layout engine 212 and used to determine measure results. Each measure result is loaded into a corresponding cell in the layout mapping storage unit 205. Once the axis displays are formed and the cells are loaded, the display unit 206 displays the view that is provided from the converted layout mapping" and "The cells will later be filled with measure results for the measure being characterized in the view. The cells are designated to correspond to the groups of records on each axis. Each cell corresponds to a group on each axis"), i.e., the system takes into account that there are multiple different data or dimensions collected from other sources and finds ways to solve such differences.

As per claim 31, Shoup discloses:

(Currently Amended) A program storage device according to claim 10, wherein the multidimensional chart of accounts comprises a centralized database (Shoup, [figure 5], [col. 9, lines 16-46], wherein illustrates a multi-dimensional data structure and is centralized database).

As per claim 34, Shoup discloses:

(Currently Amended) A tool according to claim 21, wherein the gap detector and resolver document how gaps are bridged (Shoup, [col. 11, lines 7-20 and lines 35-47], [col. 16, lines 45-50], e.g., "The measure values in these records are

then retrieved by the layout engine 212 and used to determine measure results. Each measure result is loaded into a corresponding cell in the layout mapping storage unit 205. Once the axis displays are formed and the cells are loaded, the display unit 206 displays the view that is provided from the converted layout mapping" and "The cells will later be filled with measure results for the measure being characterized in the view. The cells are designated to correspond to the groups of records on each axis. Each cell corresponds to a group on each axis"), i.e., the system takes into account that there are multiple different data or dimensions collected from other sources and finds ways to solve such differences.

As per claim 35, Shoup discloses:

A tool according to claim 21, wherein the multi-dimensional data structure comprises a centralized database (Shoup, [figure 5], [col. 9, lines 16-46], wherein illustrates a multi-dimensional data structure and is centralized database).

As per claims 40, 41, 42 Shoup discloses:

(New) A method according to claim1, a program storage device according to claim 10, a tool according to claim 21, wherein the another data structure comprises the multi-dimensional data structure ([col. 6, lines 49-53], [col. 11, lines 49-58].

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. *Claims 29, 32 and 36 Rejected under 35* U.S.C. 103(a) a being unpatentable over **Shoup et al** (US Patent **6108657**, herein Shoup), as applied to claims 1, 3-4, 6-10, 12-13, 15-27, 29-31, 34-35, and 40-42 above, and further in view of Diamond et al. (US PGPUB 20020116299, herein Diamond).

As per claims 29, 32, and 36, Shoup does not disclose:

wherein the centralized database is located at a central office.

However Diamond, in an analogous art, discloses **wherein the centralized database is located at a central office** (Diamond, [0056], [0057], e.g., "The local data 492 is periodically transmitted through the interface connection 506 to the central office, either through actions of the user or automatically, and is stored in the central office database 510"). Therefore, it would have been obvious to a person of ordinary skill in the art at the time of invention was made to incorporate the teaching of Diamond with the teaching of Shoup to uploaded to a central database, which collects data from terminals in various remote locations (Shoup, [0057]) .

Response to Arguments

8. Accordingly, examiner strongly believes that a prima facie case has been clearly establish with respect to the prior art rejection of the instant claims, given their broadest reasonable interpretation.

9. Applicant's arguments filed 12/28/2009 with respect to claims 11, 3-4, 6-10, 12-13, 15-32, 34-36, and 40-42 have been fully considered but they are not persuasive. Examiner respectfully maintains the rejection for the following reasons:

- Applicants argue on paragraph 1 of page 17 (Remarks) that Shoup fails to teach or suggest "obtaining, from one of the data sources, a further data item not originally obtainable in the second set of data items," "modifying the multi-dimensional data structure to be further defined by the second set of data items" and "converting a source data structure in at least one of the data sources into another data structure".
- Response: In the process of converting data source elements into multi-dimensional data elements, one has to take into account every single value that map a data source element into a multi-dimensional data element. The examiner respectfully disagrees with the applicants' argument because Shoup teaches or suggests "obtaining, from one of the data sources, a further data item not originally obtainable in the second set of data items", in ([col. 10, lines 30-67], [col. 13, lines 27-48], [col. 14, lines 1-17], wherein "After new records are placed in the master table 202

in response to a new query, the index engine 211 reviews each new record. If the index engine encounters a dimension value that does not already have a corresponding index record, then a new dimension index record is created for the dimension value. If the index engine encounters a dimension value that already has a corresponding dimension index record, then the existing dimension index record is updated to account for the new record"). And Shoup teaches or suggests "modifying the multi-dimensional data structure to be further defined by the second set of data items", in (Figure 6B, element 244, [col. 14, lines 18-54], wherein "index engine 211 to update the master table index 204 in step 225 in response to a newly received set of records from a query. First, the index engine 211 selects a record in the newly received set of records in step 240. Next, the index engine 211 selects a dimension value in the selected record"). And Shoup also teaches or suggests "converting a source data structure in at least one of the data sources into another data structure", in (Figure 8, [col. 6, lines 47-51], [col. 11, lines 7-15 and lines 40-48], [col. 19, lines 56-65], [col. 21, lines 44-55], wherein "the record management system converts the layout mapping into a multi-dimensional view. For each cell in the layout mapping, measure results are determined based on the measure values in the records in each group corresponding to the cell").

For at the above reasons, the rejection is maintained.

Conclusion

10. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a). **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

The prior art made of record, listed on form PTO-892, and not relied upon, if any, is considered pertinent to applicant's disclosure.

If a reference indicated as being mailed on PTO-FORM 892 has not been enclosed in this action, please contact Lisa Craney whose telephone number is 571-272-3574 for faster service.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to TUAN PHAM whose telephone number is (571)270-3173. The examiner can normally be reached on Monday to Friday (8:00am - 4:30pm) EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Don Wong can be reached on (517)272-1834. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/TUAN PHAM/
Examiner, Art Unit 2163

03/10/2010

/Kuen S Lu/

Primary Examiner, Art Unit 2156